

MEDICAL EXAMINER.

DEVOTED TO MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

No. 49.] PHILADELPHIA, SATURDAY, DECEMBER 4, 1841. [VOL. IV.

LECTURES ON THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE HEART.

BY W. W. GERHARD, M. D.

LECTURE XX.

HYPERTROPHY OF THE HEART.

THE heart, like all hollow organs, is subject to thickening or hypertrophy. The disease is rather one of slow nutrition than of any active disturbance, never occurring in a very short time, and resulting either from the effects of various acute diseases which have left more or less permanent lesions after them, or from some long continued stimulant acting slowly upon the organ.

Hypertrophy is divided into three varieties. The first, or simple hypertrophy, is that in which the thickness of the muscular tissue is increased, without much alteration of the valves, or dilatation of the cavities. This variety lasts for a very long period, and in many cases seems scarcely to shorten the life of the patient, or to produce much disturbance of the functions. It is rather a favourer of diseases of other organs than a cause of death by the derangement of the action of the heart. The second variety is neither common nor very important. It is termed concentric hypertrophy: the thickness of the walls of the heart is increased, but only in the interior, so that the size of the whole organ does not appear at all or, at least, much greater than usual, while the walls are found to be much thickened if they are cut into, and the cavities proportionally diminished, the thickening taking place mainly at their expense. If this lesion is carried to a great degree, it will produce a decided impediment to the circulation; but, practically, this degree of alteration is rarely met with. The third and last variety is hypertrophy combined with dilatation, the most severe and the most intractable variety of this disease. The danger partly arises from the direct effects of the lesion, and partly from the complications which generally precede and aggravate the hypertrophy. Like the other, this variety is slow in growth, but from time to time it takes on a sudden and ra-

pid increase from attacks of acute inflammation of its serous membrane.

The *anatomical characters* of hypertrophy vary so far as the size and conformation of the heart are concerned; but they possess several characters in common. The tissue of the heart is not increased in thickness, but it becomes harder and more resisting than the natural muscle,—in some cases nearly as firm and as difficult to cut as cartilage. The colour of the heart is redder than usual, and even in those cases in which the patient has become anemic, the redness persists for a very long period after the other tissues of the body. The shape of the heart remains nearly natural in concentric hypertrophy, but in the simple, and still more in the dilated variety, the organ becomes more rounded, and approaches to the spherical form.

Causes.—These vary according to the nature of the lesion. In the simple variety the cause is generally mild and slow in its action, producing a gradual increase of nutrition. Sometimes the heart is disproportionately large from original conformation, or from some unknown cause acting in early life; but in general no variety of the disease occurs until puberty, and the proportion of cases becomes greater and greater as the patient advances in life. Active muscular exertion, especially if conjoined with powerful action of the muscles of the chest, which impedes the respiration and circulation, frequent attacks of slight muscular rheumatism, nervous disorder of the heart, and acute inflammation of the organ badly cured, may all give rise to this variety. The causes of the second are unknown, but they are more frequently referrible to inflammation, or to slow rheumatic attacks, than to any other. The third variety is nearly always more or less dependent upon inflammation; sometimes it commences during the attack of endocarditis, but in most instances it is caused by the obstruction to the circulation which results indirectly from the valvular thickening occurring during the acute attack. The heart is thrown into violent action by the effort necessary to force

the blood through the thickened valves, or to repel it backwards when the opening is permanently dilated. There are other cases, although less frequent, in which no acute cause can be discovered, and the hypertrophy results either from long continued muscular efforts, or from slowly acting irritation, especially gout or muscular rheumatism.

Signs and Symptoms. The physical signs of hypertrophy are generally quite conclusive. In the simple varieties, they belong exclusively to the lesion itself, but, when the heart is dilated, the signs are more or less mingled with those of valvular disease and of dilatation. In simple hypertrophy we have three well-defined physical signs: the first of these is the increase of the impulsion. The force of impulsion depends partly upon the quantity of muscle, and partly on its power or activity; and, as in hypertrophy, the size is necessarily increased, while the tissue of the heart becomes stronger and firmer; there is necessarily an increase in the power of impulsion, which is only lost when the energies of all the muscles decline on the near approach of death. The impulsion is not only increased in force, but in extent, the heart evidently applying itself over a larger surface, and raising itself gradually against the ribs with a heaving motion, which is totally different from the short, quick stroke of nervous or functional disturbance. In other words, the observer feels that there is a positive increase of momentum dependant upon a large mass pressing against the walls of the chest. In all the varieties of hypertrophy the increased impulsion forms one of the most characteristic signs, but it is of course less in the concentric than in the other varieties, in which the size of the organ, considered as a whole, is increased. It is greatest in some cases of hypertrophy with dilatation, in which the walls of the heart are excessively thickened. The increased force of impulsion may be readily calculated by a reference to a normal and a hypertrophied heart; in the natural state the thickness is not usually more than a third to half an inch increased at the middle of the left ventricle, which we generally take as the standard. The normal thickness of course varies, just as that of any other muscle of the body, depending upon the general development of the individual, the sex, stature, &c. Hence

the heart is rather thicker in males than in females, and in those who have followed laborious employments than in persons who have led an idle, inactive life; in the well-nourished, than in those whose digestion is impaired, or diet insufficient.

The mode in which the impulse is formed is also peculiar; instead of a short decided stroke, it is heaving; that is, point after point of the heart is applied against the walls of the chest, which gives to the observer the sensation of a large massive organ, and not simply increased energy and rapidity of blow. As the total size of the heart is greater in hypertrophy with dilatation than in any other variety, the heaving motion is then of course most perceptible.

The sounds of the heart are more or less changed in hypertrophy: even in the most simple variety the sounds become less sharp, especially the second, and the first is more or less prolonged, approaching insensibly to the bellows sound. In some cases the second sound disappears entirely; in others it retains its natural distinctness; and in the third variety it may even become louder than natural; for, as the necessary effect of dilatation is to increase the loudness and sharpness of the second sound, the deadening effect of the hypertrophy is more than neutralized. In such cases we often find a prolonged and rough bellows sound, while the second is clear and distinct, but the valves must of course remain in the normal condition.

The degree of hypertrophy may also be measured by percussion, and by the prominence which is almost always produced after a time. The prominence is most readily formed in young persons whose cartilages are elastic, and yield readily to the long continued effects of the heart. Like the enlarged heart, the prominence is more or less oval in shape, and is of course much greater in those cases in which hypertrophy is conjoined with dilatation, than in the simpler varieties. The results of percussion are much more satisfactory; not only do we ascertain the actual limits of the heart, but we can, with much accuracy, ascertain if the thickening is great at the centre of the organ. In such cases the dulness of sound is replaced by complete flatness over the centre, and although the extent of dulness which is naturally observed may not be increased, it may become so much more evident, and so much

greater in degree, that our diagnosis is equally sure. In cases where there is no dilatation, the degree of dulness at the centre of the heart is a much better indication than the mere extension of it.

The *sensations* felt by the patient in the chest are at times a good guide for the diagnosis. If the chest should happen to be narrow and the heart more or less compressed, the strong impulsion is proportionably much more distressing to the patient, who then complains of the violent throbbing; but a full, capacious thorax with firm ribs, is by no means so apt to feel the impulsion, and the thickening may go on to a great degree without causing much uneasiness. Besides the palpitation, there is often much suffering from dyspnoea, which arises, partly from the difficulty in expelling the blood from the heart, if the auriculo-ventricular valves should be patulous, or the semilunar valves contracted, and partly from the secondary effects of this impediment, which congests the lungs and prevents their full expansion. Pains are also complained of from time to time; these are directly dependent upon the disease, and are vague and wandering, sometimes extending down the left arm, as in other diseases of the heart, or they are secondary, and depend upon the accidental attacks of inflammation of both serous membranes of the heart, which are almost sure to recur from time to time. In many patients there is scarcely pain, but merely a vague sense of uneasiness, at times scarcely felt, at others more resembling that of a weight pressing at the region of the heart.

The *vascular system* is necessarily affected in cases of hypertrophy. The arteries are strongly distended by the powerful action of the enlarged heart, unless the aortal valves are contracted, when the pulse may become small and irregular; this, however, results from the latter cause, and not from the hypertrophy itself, which always tends to increase the firmness and fulness of the pulse. The capillary system feels the impulsion as well as the arterial, and congestions often occur at different parts of the body; hence the subjects of hypertrophy are liable to hæmorrhages, especially from the nose and the lungs, to hæmorrhoids, and to apoplexy of the brain and lungs. The hæmorrhages become less frequent as the strength of the patient declines, and the congestions connected with them become more passive

in their character; but in the early periods of the disease the natural effect of a strong impulsion of the heart is nearly always perceptible upon the capillary system. The passage of the blood through it becomes obstructed, and external hæmorrhage is a natural mode of relief; but if internal, though a similar effort of nature to relieve the vessels, it is often a cause of death. The veins are very little distended in simple hypertrophy; like the rest of the vascular system, they are generally well supplied with blood in the early stages of the disease, but they do not present any marked pulsations unless the tricuspid valve should yield to the continual stretching of its fibres, when regurgitation is apt to take place, and, of course, pulsation of the veins follow. The dilatation of the valve is most apt to occur in the third variety of hypertrophy, because it must participate after a time in the general enlargement or the cavities of the heart.

CLINICAL REPORTS.

PENNSYLVANIA HOSPITAL.

Surgical Wards, Service of Dr. E. Peace.

Discharged, Oct. 30, 1841, Ann P—, æt. 27, of a plethoric, scrofulous habit, and sanguine, lymphatic temperament, married, and five months gone with her second child, having miscarried seven months previously, of the first. Admitted Sept. 27, complaining of great pain in the left side of the head, and in left ear, accompanied by a constant, free, and very fetid muco-purulent discharge from the meatus of the latter. Four years ago, last spring, she struck her ear in a fall upon a brick pavement with so much violence as to excite bleeding from the part and cause severe pain of several hours' duration. More or less pain and ringing in the ear continued from that time with little intermission, the pain gradually increasing, until, at the end of six months, it became very acute. After suffering four or five months longer in this manner, without any remedial essay, other than an occasional vesication over the mastoid region of the affected side, she entered the Pennsylvania Hospital. While here, she was cupped repeatedly, blistered at the back of the neck, wore a seton in the neck for two months, and in six months left the institution entirely well.

An interval of two years and three months elapsed without any return of the former symptoms. Early last winter she was attacked with frontal pains darting across from temple to temple, and intense pain in the left ear and side of the head, always more violent to-

wards evening and at night, and much aggravated by the slightest motion, stooping, or exposure to heat. At the same time there appeared from the diseased organ a constant watery discharge which, by degrees, became purulent, and, on the approach of the mild weather of spring, began to be extremely offensive. This state of things continued throughout the summer, until she entered this hospital the second time on the 27th of September.

Specular examination disclosed an apparently superficial ulcer on the membrane of the tympanum, about three lines in diameter, together with redness and an excoriated appearance of that membrane, and the meatus externus generally; there being, moreover, much sensibility of these parts upon the introduction of the instrument. The tonsils and fauces also appeared to be inflamed, and the hearing on that side was so obtuse as to render inaudible the ticking of a watch closely applied to her ear.

She was purged, restricted to a vegetable diet, and cupped freely on the temples and behind the ears. The auditory tube was thoroughly syringed out with tepid water and castile soap, and filled with an injection of creosote water, in the proportion of four drops to the ounce, twice daily, for ten days. No material benefit having been derived from this plan of treatment, further than a temporary correction of the fetor after each dressing, another course was instituted. After a thorough washing of the meatus, as before, burnt alum in powder was carefully thrown into it once a day by insufflation through a quill. The pain abated, and the discharge diminished, while the fetor was almost entirely removed after the second application of this remedy. In thirteen days, all unpleasant symptoms, except the inflammation of the fauces, and some dullness of hearing, had entirely disappeared.

Creosote water (four drops to the ounce) was freely applied to the inflamed surface with a camel's hair pencil once daily for seven days. She was then discharged cured, having recovered her hearing so as to perceive the ticking of a watch at some distance from her ear.

In the above case no perforation of the tympanum, such as might have been expected, was discovered. The examination, however, was not perhaps as complete as it might have been, since the catheterism of the Eustachian tube was not resorted to, although obstruction of this tube was suspected at the time.

Remarks.—Burnt alum is an application much in vogue in these cases among the practitioners of Paris. We are indebted for its prescription in the present instance, and its introduction into the practice of this hospital, to Dr. E. Lang, of this city, who has seen it repeatedly employed with great success by the celebrated Deleau.

The solution of the acetate of lead, so strongly recommended by Kramer, and which is re-

ally so valuable, especially in correcting the excessive fetor, was not directed for this individual. In relation, however, to the promptness and efficiency of the acetate of lead in removing all unpleasant odour, it may not be out of place to remark that this chemical characteristic alone would render it an extremely useful auxiliary in the dressings of parts affected with fetid discharges.

Attention has been incidentally called to this property of the acetate of lead by Ricord, in his work on the venereal disease, when recommending its employment for certain offensive discharges from the vagina.

The explanation given is that the sulphuretted hydrogen (the evil spirit in most vile smells of organic origin) is decomposed by the lead, and a sulphuret of the latter is precipitated, which becomes evident by blackening the dressings. This antiseptic plan has been tried repeatedly in these wards during the past five months, and always with results so satisfactory that we should be inclined to prefer it—wherever not contra-indicated—to any preparation of chlorine or creosote; both of which are, in themselves, objectionable, because offensive.

E. H.

BIBLIOGRAPHICAL NOTICE.

Introductory Lecture to a Course on Obstetrics, delivered in Jefferson Medical College, November 4, 1841. By CHARLES D. MEIGS, M.D., Professor of Obstetrics.

The number of introductory lectures on our table is this year unusually large. This accumulation may be, in part, attributed to the impetus given to the medical school of Philadelphia by the almost entire reorganization of the Jefferson Medical College. The inaugural addresses of the newly appointed professors are of course expected for publication, while their seniors deem the occasion, as we have seen, a fair one "to speak out and be heard for themselves." We have noticed this series of introductory lectures at considerable length—many of them as the maiden efforts of distinguished gentlemen, and all of them as having special interest from the change in the relative position of the schools which they represent.

The lecture of Professor Meigs is altogether worthy of the high reputation of the author. It is an elegant composition—eloquent, and appropriate to the occasion. Appearing for the first time in the station of a public lecturer, Dr. Meigs has naturally introduced his remarks to his class with some allusion to himself; and, with a brief and modest notice of his own early

career, he has gracefully blended highly finished and beautiful sketches of the great men of his pupilage. The doctor commenced the study of medicine in 1809, with the late Dr. Fendall of Augusta, in Georgia, whose name he mentions in terms of warm respect. He completed his education in the University of Pennsylvania, and of the professors of that day he draws these glowing portraits. First, Rush—the American Sydenham:

"The eloquent accents of that venerable man seem to fall upon my ears even now, when I turn back my thoughts to those young days filled with aspiring hopes and fond anticipations of success and professional distinction. I see him now, surrounded by 500 young men, my fellow students and fellow citizens from every part of our wide-spread country, each one gazing intently upon that reverend countenance, wrinkled with age it is true, but still ruddy with temperance, and radiant with the smile which showed how charming the divine philosophy that sat enthroned upon a brow of the rarest benignity and beauty. I see that good old man erect himself in his chair, upon which, on account of his great age, he was accustomed to sit at his lecture. He puts back his glasses on his forehead—he rises from his seat, and leans with his aged hands upon the desk—he looks abroad over the whole mass of faces and says, "gentlemen, *silence!* I rise from my seat for a special object—I desire you all to remember, that upon this day, I stood up before you while endeavouring to impress upon your minds the necessity of opposing the very beginnings of disease—in order that I might pronounce these two words in your ears—*OBSTA PRINCIPIIS, OBSTA PRINCIPIIS.*" Those words sunk ineffaceably into every man's memory—you hear me repeat them at the distance of twenty-nine years; and it was by such methods as this—by some graceful wave of the hand, by some forcible gesture of the body, by some most apposite illustration, that he endeavoured always to impress deep into the plastic material before him, that signet of his intellectual power whose traces are still visible in the *Mens Medica* of these United States—which I firmly believe, is extending its nature and kind, as a good leaven that leaveneth the whole lump, beyond the Atlantic wave."

Barton:

"There, too, I heard the lessons of the fiery Barton. He had a head that seemed chiselled as by a sculptor, so firm and unwavering was it in its resolute expression. He came there scrupulously dressed, and exactly punctual, to pour the rich and fertilizing stream of his discourse, while his face often became the express image of his sentiment, as he felt the warm and generous glow of *Linnaeus'* zeal at the prospect or the hope of some

new medicinal herb. When he told us of opium,—of its talismanic properties, and its baleful powers, the tears coursed down his sympathetic cheeks and ours, as he related the history of the immortal Brown, his early friend—his meteoric fame—his shining intelligence—his dark, and dreary, and dismal fall and death. And then he would gather himself up again to criticise the doctrines of Cullen, and Murray, and many others, and to urge, urge, urge upon us the results of his own experience in the therapeutic properties of the preparations of lead, or the nature of American medicines; whilst it was a delight and an honour to sit at his feet and listen, as he poured his lay, almost poetical, over the dry and barren fields of the *Materia Medica.*"

But there was a Gamaliel at whose feet one might be deemed happy to sit even all the day long:

"Look at that great amphitheatre, crowded to the outermost ring. No stamping of noisy feet indicated the impatience of a crowd for the arrival of a tardy master. No—at the *point* of time he entered the area. He came, with that cold eye, which you could neither bear nor forbear—its light was different from that of common men. He came with that face of pentelic marble—that hair powdered and dressed in the most finished manner—that blue coat with its metal buttons, closed on his breast on account of his delicate health. There he stood silent for a moment. You would as soon think to cheer a statue, or applaud at the marble features of a corpse, as to have raised your voices in praise or blame where Dr. Physick stood. He opened his mouth after a cold salute, and from thence proceeded choice words of wisdom, which we were too anxious to gather up in our garners of note books, to stop for a moment to see what other men were doing, or imagine what they were thinking, for so great was our trust in what he should say, that we received it as a gospel; and truth to speak, no word of folly or frolic did I ever hear proceeding from the lips of that great man, who deemed the business of dealing with men's lives and teaching others to do so, one of such solemn and dreadful import that there was no place in it for glee or laughter; and so he acted, and so he always looked—he lived so, and he died in that belief. Dr. Physick was a very great man, gentlemen: You had an indefeasible tendency to stand uncovered in his presence. There was a spotless purity in his character, so that he walked as in a bright cloud of moral truth and beauty. Apollo, the god of physicians, seemed to have inspired the nobleness of his countenance, and to have imparted somewhat of the *mens divina* to his whole moral constitution. You and I may live long, gentlemen, yea, and our children after us, before so rare a combination of great and admirable qualities shall again conspire to pro-

duce the perfect pattern and model of a surgeon and physician."

Wistar, the beloved of the class :

"But why have I not yet spoken of *him*, the beloved of the class! By what epithets shall I attempt to particularize those singular good qualities, which, by a happy conspiracy, united to make up the character of that good old man—the idol, the darling of the classes? Do you not see that powdered head of his, with its well-adjusted locks and queue? Dr. Wistar enters the area, followed by a cloud of witnesses, bowing often, and rubbing his hands, and with a face on which sat a pleased and yet bashful expression—a mixture of emotions which gave it a most peculiar character—chiefly delightful, however. He came there amidst sounds of greeting, and the wreathed smiles and looks of exchanged congratulations of the superimposed circles. Men witnessed his entrance as they witness the completeness of preparation for some great feast; there was a satisfied feeling already, like that with which a company inhale the rich perfumes and odours of a feast that is set.

He lifted his hand, and in a very short, quick expression, he said, *Gentlemen!* Henceforth all was still—a profound silence, broken only by the arrival of some tardy student, which was regarded as a wrong done to the whole company, and a rudeness to be visited by frowns, or even more decided marks of disapprobation, particularly if the white-haired teacher should stop in his career to look around the sky-parlours. Ah, gentlemen, those were the halcyon days of medical instruction!—days ever to be remembered. But those good men are gone off the stage of the world. The eloquent voice of Rush is silent where he lies yonder in his grave; and Wistar sleeps among the undistinguished dead of his sect, in that ground to which I followed his remains—one of a vast concourse of his fellow citizens, treading with mournful steps, and slowly, the way taken by the dead body of a public benefactor. I felt that day—grieved as I was to part for ever with one who had gained my whole esteem and reverence—that I was honoured in being a physician, for my profession was exalted and honoured in his life, and by the public testimonials to his worth and many virtues rendered at his death."

Dorsey :

"The beautiful Dorsey, with a face as bright as the morning, and open as noon day. An ambition of the highest reach urged him onward in a career that was nobly run, and would have carried off the highest prize, had he been spared to the country. Conquering, by most arduous struggles, certain natural impediments of his elocution, he had just attained the perfect victory. He had just stepped on a lofty stage of action, when the angel of death struck him down too, that he might, though

young, belong to that great age of American Medicine. He came not down to our times, but was gathered to his brethren and his like. He sleeps here among them. The American Sir Astley, is a title which he deserved, not more by the graces of a most ornate mind and manners, than by the great surgical skill and renown which he so early vindicated to himself."

And James :

"Dr. Thomas Chalkley James, Professor of Midwifery in that day—a member of the Society of Friends,—a *good man*. There are many persons here, I suppose, who remember the quiet, calm, gentle, modest style with which he came out into the rotunda to meet us in the afternoons. He brought there written lectures filled with learning, ransacked from the whole stores of that time, and arrayed for us into an order and a show that made them always delightful,—garnished, as they were, with apposite classical citations, whether from the ancient or modern authors. He brought, too, the results of a great experience in practice. He brought there, also, his modesty, which never left him from his earliest youth, and which frequently sent the mantling blood over cheeks and brow to testify that he had the deepest sense of the delicacy of the task assigned to him—that of exposing to hundreds of young men, those trembling secrets of the lying-in chamber, which he had blushed to learn, and which he more redly blushed to tell. Take him all-in-all, and you shall search long and far before you shall find a more honourable, upright gentleman—a riper scholar—a better teacher, or a better man."

Largely as we have quoted from this lecture, we cannot resist the temptation to offer another extract. It is not a portrait, but a scene. From himself and his teacher, the Doctor has passed to his subject proper, and after dwelling upon the importance and responsibilities of the obstetric art, he thus vividly draws the picture of a lying-in-room.

"Did you ever," he addresses the student, "set your feet inside of such a sanctuary as that! Tread softly! Here is the door. Look, how beautifully clean those walls and ceiling are; a lady's glove is not fairer. See that nicely carpeted floor! those window curtains of beautiful fashion, to exclude the flaunting lights of the world, which must have no intrusion here, where the lights should be soft and dim. Observe that bed made up, with its snowy pillows, and its beautiful hangings of silk damask! Take a white kid glove upon your hand, and see whether you can find the smallest particle of dust, or the least remainder from the last sweepings and dustings of the well-bred housemaid. There stands a wardrobe of the richest form and materials, burnish-

ed and bright; and here—come on this side!—in the second drawer from the top of this exquisite bureau, which I open for you, she has secretly, but with sweet smiles, the harbingers of a new hope and a new happiness for this whole house, put carefully away all this beautiful array of worked caps and frocks and bands and slippers, with colours, as you see, like a bright parterre, of ribands of every hue—blue, and pink, and white, and green, and red, and purple,—all adapted by her own taper fingers when alone, or the welcome gifts of her many loving and anxious friends. Here they are! and no man's eye has seen them before, waiting to be selected by the nurse, or by some good aunt, when that happy hour shall have come that brings with it deliverance and safety, congratulations, sobs of happiness too great for the bosom to contain, and the sweetest sensations of human complacency in the finished, concluded, and blissful result of a long-tried and holy love.

Such, and so careful and *recherché*, are the preparations and arrangements for an expected confinement, that it is really quite an agreeable spectacle to look upon in reference to the moral associations connected with these events and which lend to them a charm so truly poetical, that the ancients were happy to reduce them into a physical and sensible and visible expression, by the invention of the divine *Pysche*, the soul, the object of such tender affection by her lover. A true and sacred affection, purified and mundified of the dross and corruption of the human nature, must be like that of this exquisite fable—a purely psychological ens or quality.

But let me proceed with my story. Let us look farther into some of the events of the profession you are about to make!

The first signal is given; the hour anxiously looked for, and even longed for with fear, has come at last, and the signal of its arrival is pain. She is gone to that chamber, and she trembles and grows pale, that young and beautiful thing! Yes! she trembles, and is amazed at the new-born sensations that have seized upon her frame. Her consciousness, her teleological sense, teaches her that a crisis is at hand; and the whole house is aroused to a sort of excitement and perturbation, which soon is communicated to those friends and relatives whose inquiries have been lately repeated more and more frequently. The busy, kind-hearted, and bustling nurse is summoned where she sits at home, with wisdom and prudence brooding on her brow, waiting for the summons, as she has been every day for a week or more. Her little bundle is soon made up, her trunk is packed, and away she hies to carry with her some assurance of safety, much positive comfort, and the hope of a most prosperous getting up, at least.

The pain comes again—and again it grows severe, and every eye is turned with tender-

ness and compassion upon that young and beloved girl, when she sits in the great arm chair and bears or tries to bear that which cannot be borne. At length the plot thickens; events are at hand which require the controlling and guiding hand and the instructed head of the physician. Let us stop here. That beautiful creature, in the great crisis of nature, is an only daughter,—the object of the concentrated affections of parents and relatives. To form her manners—to lend grace to her natural beauties—to guide her flying fingers over the cords of the harp or piano—to teach her strange tongues—to attune her voice to the composition of *Boyeldieu*, of *Mozart*, of *Rossini*, and *Bellini*—to adorn her person—thousands of pounds have been expended, and sleepless eyes have often watched and waited for her return from the party or the ball, the scene of the triumphs of her beauty; and here she is at last, caught in the toils, destined to pass through pains like those of a crucifixion, and to incur hazards against which the Church has ordained a set form of prayers. What vast interests—interests of the heart—are here put upon the hazard of the die; and you, sir—or you—or you—are summoned to stand betwixt her and those agonies, those dangers, or that death, which stands with his cold and bony hand poising the dart aimed against that priceless life! Will you take all this responsibility upon yourself? Will you go there to that sacred apartment, where man never trod before, save the privileged one? and are you ready to say, come what may, here am I! There is nothing here with which I am not familiar as with household phrases and the most trite occasions. Beware what you do! Enter not into that sacred precinct, unless with the loins of your mind girded—with your lamp of knowledge trimmed and burning—with that gem of the mine flashing on your brow—knowing, feeling, conscious that you are equal to the grave duty you assume. If you can truly say, I know that duty—I know it as well as it can be known by mortal man—then go and stand like the priest of *Lucina*, and your offering of science, of skill, of sagacity, of humanity, will be an accepted one; the victim, bound and crowned for the sacrifice, shall go free like another daughter of *Clytemnestra* at *Aulis*, for your vow is fulfilled.

Yet again let us take a further view of these mysteries. You arrive, and a feeling of renewed security comes along with you. You speak words of calm and assured confidence. You exhort that lady to bear the pain with patience and hope, and you take your seat to observe the progress of this curious scene.

The labour goes on, and having acquired the needful information, you make your announcement of a favourable and speedy termination of the distress of that beautiful creature. But you are disappointed; the affair lingers—she becomes restless—she tosses from side to side;

groans and cries proceed with sobs from that bosom which never felt a pang before; and that countenance is flushed and swollen, which, before, the winds of heaven had never visited roughly. What is the matter! "The pain—the pain—the pain! I shall never recover—I cannot endure all this—my head aches!" There you sit, sir—for you know that the face is to be flushed in labour, and the pain is great and the patient naturally restless. She rises on her elbow and says: "Doctor, what is the matter? I cannot see you. Oh, how my head turns!—how it aches!" "Never mind it; have patience. You are nervous—don't be nervous—the child is almost born. You will soon be well." There, sir, you have fallen into an impassible and bottomless gulf of regrets—you have plunged that lovely woman headlong down, and she is now irretrievably destined to lie, as Shakspeare says, in cold obstruction and to rot—and that happy home is desolate—that temple of peace is broken down, for its idol has fallen, and shall disappear for ever from the gaze of those eyes that have been fondly bent upon it for so many years.

The child is not born; but in an instant—in the twinkling of an eye—horror has seized upon all the occupants of that chamber. The sounds of running feet—the accents of wo, wo, wo, are heard, and a wild confusion has suddenly succeeded to the quiet of that chamber, which before was broken only by the moans of that lady, approaching to the supposed consummation of her happiness. A loud and hissing sound, as the hiss of a thousand snakes, issues from her now livid and distorted mouth—those eyes, which it were heaven to look upon before, are rolled in opposite directions or protruded to bursting from their wide-open sockets. That brilliant brow is overspread with a dark livor; and that breath, like new mown hay, is but a succession of frightful explosions, scattering foam and blood in every direction, dabbling the bright hair, or flecking the exposed and agitated bosom; while the wildest and most fearful convulsions wrench and torment those beautiful limbs; and there she lies, that lovely one, as if the prey of fiends, delighting to tear and rend and reduce that image of grace to their own frightful and abominable deformity. What is all this, gentlemen? It is no fancy sketch—it is a sober and imperfect representation of the horrors of a lying-in-room, where a beautiful woman is seized with puerperal convulsions—a common occurrence—and which, I appeal to the respectable gentlemen here, is among the dreadful events of the life of a surgeon accoucheur. You ought to have prevented it, sir, or you ought to seize with a lightning rapidity upon the indications. You ought to be able to say to all this confusion and tumult, "Peace, be still; I am here, I shall extend all the relief that is possible. All the resources of art are in my hands: peace, be still." Here is the

demand for that knowledge which men *pray* for. There is no gibe for the physician now. No: he alone has the skill and the knowledge which cannot be begged, borrowed or bought—it must be earned."

The length of these quotations is much beyond our prescribed limits, but we believe our readers will not regret the space allotted to them.

THE MEDICAL EXAMINER.

PHILADELPHIA, DEC. 4, 1841.

We observe, in the Boston Medical and Surgical Journal for Nov. 24th, that the subcutaneous carving of muscles for lateral curvatures of the spine, is practised at the Orthopedic Infirmary of Boston,—and are extremely sorry to hear it.

Our highly respected contemporary of the New York Medical Gazette, is hard upon us for the appropriating five columns in our 45th number to "Animal Magnetism;" and, considering us as taking "a middle ground" upon the subject, very pertinently asks whether, in "a periodical which busy doctors are expected to read, *the play is worth the candle!*" In justice to us, the editor states, (on our authority, we presume,) "that Professor Wood, of the University, in his late introductory, goes so far in favour of *the new science*, (?) as to consider 'these observations as legitimate subjects for philosophical research,'" &c. It would be scant justice in us towards Dr. Wood to charge him with applying the word *science* to any of the vague reveries which have been founded, heretofore, upon a few very curious, but still in some degree isolated facts, having no obvious connection with magnetism, though unwarrantably made to bear the name. We have not even done so ourselves. Let us assure our friend of the Gazette, that he will never detect us in shielding our position under the cloak of *authority*, under any circumstances; and we beg to be solely responsible for our philosophical sins. Much that we believe to be true, would undoubtedly be pronounced "humbug" by Dr. Wood, as well as by the editor of the Gazette, were the statement of our opinions suddenly and nakedly advanced. Yet we trust in heaven, and "our goose-quill grey," to make good those opinions to the conviction of our cotem-

porary himself, when opportunity offers, (we know he is philosophical,) and, also, to do it without the necessity of inditing any thing which, even should our argument prove incorrect, will tax, to no practical benefit, the time of the busiest doctor in "this working day world of ours." When those opinions have been made public through the press, which is not yet the case, none will feel happier than we, to have them *proved*—as almost every thing hitherto based upon the same foundation *has been proved*—a humbug! We will venture, then, "always with deference to the editor," to esteem his conclusion *somewhat hasty*. R.C.

From what we witnessed in Boston and other cities of Massachusetts, during the intense cold of last winter, we are convinced that the lives of many persons might be saved, in our own more temperate but more variable climate, by the use of the *respirators*. The Boston Journal of the 27th ult. mentions that our friend Dr. Bowditch has a supply of these instruments at various and moderate prices. We cannot quote the prices, for the advertisement of Dr. B. has never met our eye; but to those who are compelled to undergo great exposures while in delicate health, any reference to places where these instruments can be procured of dependable quality, is valuable.

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA MEDICAL SOCIETY.

Session of Nov. 27. Dr. Warrington read an interesting lecture on *diseases within the female pelvis producing symptoms analogous to those of displacement of the uterus*. The lecturer, after a full statement of the rational signs of prolapsus of the uterus, as laid down by authors, proceeded to comment upon the various modes in which those signs were grouped together in diseases within the pelvis in such a manner as fatally to confuse the diagnosis.

Among the affections sometimes simulating procidentia or prolapsus in many of their rational signs, were mentioned retroversion, antiversion, and even neuralgia of the neck and body of the uterus, fibrous and polypous tumours of the pelvis, chronic metritis, spasm of the urethra, ulcerations within the vagina,

lumbar and other spinal irritations, duplication or invagination of the vagina, stricture of the rectum, &c.

The lecturer appeared to desire from the members further light, by which some settled diagnostic signs of an affection that at present seems, with the public and many professional men, to furnish an universal patronymic for all the diseases of the female pelvis about which there is found to hang some degree of mystery.

In the debate, Dr. Reynell Coates repudiated the idea that the rational signs of prolapsus as laid down by the authorities, (using the term generically in its widest sense) were in any degree necessarily characteristic of the malposition of the uterus, which latter are less important in themselves than they are usually esteemed, in cases in which the uterus does not descend so far as to present at the orifice of the vagina, or project beyond it. The various peculiar discharges, the anal and vesical symptoms, the dragging and bearing-down sensations, the lumbar uneasiness, and the sympathetic pains felt in the hypochondriac region, were all symptomatic in various complaints essentially distinct in character from malposition of the uterus, and might occur in their totality without that relaxation of the subvaginal cellular tissue,—particularly at the upper part or the posterior face of the vagina,—which is the principal mechanical cause that permits the descent of the uterus under abdominal pressure. Among the causes of many of the broadest combinations of these *so styled* rational symptoms, he thought it admissible to rank a condition of the neck of the uterus, sometimes attended by superficial ulcerations of the part, which he believed to be of much more common occurrence than was usually supposed, especially in the class of cases in which there is a strong tendency to chronic hysterical convulsions. He admitted that prolapsus uteri very frequently occasioned a dragging and bearing-down sensation, which, however, was a necessary consequence of some forms of piles, certain pelvic tumours, vesical irritations, and even undue habitual tonicity of the abdominal muscles—not a very rare effect of long continued costiveness. He stated that the pressure of the neck of the uterus upon the perineum, in moderate cases of procidentia, sometimes

produced and always very seriously exacerbated irritation of the part, and gave rise to complicated symptoms; but insisted that these were signs of the irritation and not the procidentia, and were very often present in the absence of the cause to which they are usually attributed. Procidentia, he remarked, was often paroxysmal and temporary, from general relaxation, and frequently recovered spontaneously from the improvement of health and mental exhilaration; and, that it often existed for a long time without producing any materially uncomfortable consequences. "The only rational sign of a prolapsus uteri, is a *falling of the womb!*" And whenever the practitioner has reasonable grounds for conviction that there exists important disease within the female pelvis, he is bound to make an examination per vaginam, by which means the displacement, if existing, is immediately discovered. The physician can then judge, with tolerable certainty, how far the displacement is the cause, and to what degree it is the consequence of the other diseased affections to which what are called the rational signs are due.

Dr. Caspar Morris condemned very decidedly, on the score of morals and feminine delicacy, the extent to which examinations per vaginam are carried of late, especially in young girls. He believed it a serious matter, and a growing evil. The public had been impressed too strongly with the idea of their importance; and when any nervous and other symptoms were capable of being referred to the pelvis, even the mothers, of late years, are disposed to urge the painful and very disagreeable office upon the practitioner, in many cases where he deems it not only unnecessary, but highly improper.

He had hoped that the debate would have elicited some suggestions for the treatment of that class of *seemingly* mere nervous affections in young girls in which no structural disease or mal-position of parts whatever can be discovered, yet which are attended with so many of the rational signs of displacement of the uterus, as to give rise to frequent, painful, and distressing examinations. He spoke of the ill effects of low diet and confinement upon cases of this character, and the too frequent resort to such measures by practitioners of distinction. This remark was additionally impressed by Drs. Parrish and R. Coates, the

latter advocating the adoption of exercise by means of properly regulated calisthenic amusements in a cool room, coupled with a generous but simple diet, with a view to develop the muscular system of those who are unable to enjoy the open air with freedom. The tonicity thus gained, he stated, not only removed the nervous symptoms in many cases, but even restored the uterus to its proper elevation in some not very trifling cases of procidentia, without the aid of any mechanical treatment.

DOMESTIC.

The author of the following letter, extracted from the Boston Medical and Surgical Journal, Dec. 1st,—John C. Martin, M. D.,—is by another represented as having undergone a most disgraceful and public prosecution, in consequence of his experiments, compelling him to fly his residence in Attleborough, Mass., fortunately to find a more profitable location in Greenville, Illinois. The letter was written in 1835, and the experiments contained in it were performed in consequence of hearing of those of Dr. Creely in England.

Sir,—The following experiments may not be uninteresting to you. They were undertaken for the public good and for the benefit of science. And although I have suffered severely in mind and in purse for making them, yet I am not sorry that the act has been committed; and all I regret is, that I am not located in a community, and surrounded by medical men, who can duly appreciate my motives, and encourage me in prosecuting a series of experiments which, I feel convinced, might lead to successful and happy results.

A case of small-pox, in its worst form, having appeared in Attleborough, where I reside, and having myself, like many other physicians, failed in obtaining fresh and pure vaccine virus, and having, moreover, witnessed and read of the frequent failures of the vaccine disease, as an antidote to the attacks of small-pox, I became exceedingly desirous of obtaining the virus directly from the cow. It is true that the source of the cow-pox virus is, and always has been, a matter of theory. Jenner, in his time, and many physicians of later times, imagined, and supposed themselves to have proved, that pure vaccine matter was the result of the action of small-pox in the cow. I have been anxious to determine this point, so that, should the theory prove to be true, physicians of this country might have it in their power at all times to obtain matter which would prove to be a more perfect prophylactic against variolous poison, than that which they are now obliged to use.

In order to test the theory fairly, I purchased a fat, healthy cow, eight years old, shut her in a stable, and fed her scantily for a few days. I then obtained some variolous matter from the individual who was sick with the small-pox, and who had been labouring under the disease eleven days. With this matter I inoculated the cow on the 2d day of October, 1835, in the following manner. I made, with a common lancet, fourteen or fifteen punctures in one of her teats, between the cuticle and true skin, taking care not to draw blood. I then inserted into these various punctures, quills charged with the variolous virus. The wounds soon disappeared, and presented no appearance of being variolated until five days. On the *fifth* day the animal seemed to show some indisposition, and on examining her teat I discovered one small elevated spot at the point of insertion of one of the quills, and an evident febrile heat in the teat, when compared with those not inoculated. This increased febrile heat continued for about forty-eight hours, and then subsided. During this time the animal lost her appetite, became thirsty, her milk ceased to be secreted, and her teat began to swell.

On the *eighth* and *ninth* days, a regular pustule was formed at the point inoculated, the margin of which contained some thin, light straw-coloured fluid. On the *tenth* day, the pustule had increased in size and become more prominent, and was distended with matter. At this period it was not regularly round, but presented an uneven surface. On the *eleventh* day, an evident change had taken place in the appearance of the pustule, it having begun suddenly to dry up. On the *thirteenth* day, the virus had become solid, so that the pustule was converted into a crust, or scab, of a dark-brown colour.

Besides introducing the small-pox virus into the udder, I inserted some also into a puncture which I made on the hip of the animal. This resulted in a sore, and in the falling off of the hair. This inoculation produced no pustule or eruption, save at the point of insertion, so far as I could discover.

I now determined to insert some of this new generated matter into the human system, and observe its effects. Accordingly, I selected a healthy boy, aged 10 years, for the subject of my first experiment; and on the evening of the 12th day of October, (the day I took some virus from the cow, being the tenth day of the existence of the pustule,) I inserted some of this virus into the boy's arm, in the same manner as in practising common vaccination. The symptoms resulting from the operation were the following: The virus lay dormant four days. On the *fifth* day, a slight inflammation or red spot arose around the point of insertion. From this period the vesicle ran its course, like the common vaccine vesicle, was characterized by a well-formed and regular areola, and in due time was transformed into a per-

fectly sound, mahogany-coloured scab. The boy exhibited but little indisposition during the course of the disease, except headach, and he continued to play with his fellows about the street, and I saw no symptoms in his case which do not attend the vaccine disease in its various stages. It should be mentioned, however, that two or three small pimples appeared on the boy's face and arm. These did not fill, but soon dried and disappeared.

While observing the rise and progress of this disease, I had no doubt that the eruption was like, and that it was, the true and perfect vaccine vesicle. In order that I might not be deceived, however, I took the boy to Providence, and exhibited his arm to two physicians of that place, Drs. Brownell and Toby, both of whom pronounced the eruption to be perfect vaccine, and gave me their opinion in writing to this effect. Having satisfied myself of the nature of the eruption produced in the boy's arm, I took matter from it on the *seventh* day, and inserted some of it into the arm of my own child, which was five months old. On the *fourth* day, a red spot appeared around the point of insertion, a vesicle was formed, and observed the same course and presented the same appearances as did that on the boy's arm, from which the virus was taken. The areola, perhaps, was not quite so regular as in the case of the boy; and the febrile excitement was greater in the child, which I attributed to its natural irritability of temperament. There were in this case a number of secondary eruptions on the surface, resulting from the vaccination.

The *third* subject vaccinated was also an infant. This child I vaccinated with matter from my child's arm, on the seventh day of the disease. This child's symptoms were similar to those presented by my own child; they were, perhaps, rather more severe. The areola was not so perfect, and there appeared on it a greater number of secondary vesicles, which became filled with fluid. The *fourth* individual vaccinated was a boy, four years old. The virus with which I vaccinated him was taken from the arm of the child whose case I last described. The symptoms attending this case were similar to those presented in the preceding one, except that they were more severe. The areola, however, was not so regular, and the vesicle was rather more imperfect, and a greater number of secondary eruptions presented themselves on the body, some of which filled and formed crusts.

I will not trouble you further in describing cases. The whole number of persons I vaccinated was twenty-three, and the cases above described will give you a notion of the character and progress of the others. I will remark, however, that I think the last individual vaccinated had the disease more severely, as the matter used in producing it was more remotely related to the cow.

Such have been the results of my experi-

ments, and I should feel highly gratified and honoured with your opinion respecting them.

Very truly your friend,

J. C. MARTIN.

FOREIGN.

Letter on the Application of Soap to Burns. By THOMAS WILLIAMSON, of Edinburgh.—Considering the vast number of accidents which daily occur by burning, it may not perhaps be unacceptable to the profession to have their attention directed to an application which I have been in the habit of using in such cases for some time past, with very decided advantage. The plan of treatment which I adopt, and here allude to, is nothing novel, and may, perhaps, be employed by many, if not known to most. It is, therefore, solely with the view of detailing what appears to me a most valuable form of application, in cases of burning, as well as of inviting its more general use, (seeing that, in this neighbourhood at any rate, it is not generally employed,) that I now trouble you with these remarks. The more common of the applications generally employed, appears to me liable to many objections. The common sweet or train oil is a remedy frequently resorted to, in the hurry and bustle of the moment attending these accidents, by friends or neighbours of the patient, who may happen to be present at the time. This application, too, is not unfrequently sanctioned by the practitioner. Granting the occasional *ultimate* benefit of this application, and waving its filthy nature, the strong objection to its use is this—that it seldom or never affords instant relief to the suffering patient. The same, I think, holds true in respect of the linimentum aquæ calcis, or Carron oil, so very frequently employed. The common raw cotton, or wadding, has, of late years, and perhaps deservedly too, held especial favour as a local application. It must, however, be admitted, that the patient derives no *immediate* relief to his sufferings upon its first application; but, on the contrary, not unfrequently complains of augmented pain for some time afterwards. This may very easily be accounted for, both by its acting as an irritating body, by its direct contact with the red or raw surface, as well as by increasing for a time the temperature of the part to which it may be applied. Besides, it in a few days becomes saturated with discharge from the secreting surface, and consequently, not only proves annoying to the patient, but also a means of keeping up discharge in more trivial cases. These objections are in a great measure got rid of by using *common soap*, which, besides its great value as a local application, commands the additional advantage of always being at hand in cases of emergency. The mode in which I am in the habit of employing it is this:—A common shaving box

may always be procured, from which a good lather may, in the course of a minute or two, be easily obtained. This lather is then gently laid over the burnt surface by means of a shaving brush, and repeated so soon as the first coat begins to dry, or the pain returns. This practice ought to be repeated occasionally during the first day, or until such time as the pain is relieved. The benefit accruing to the patient is *immediate*, and the result of the practice highly satisfactory; for in more superficial burns, if early applied, vesication is prevented, and, in the course of a few days, desquamation of the cuticle follows, without leaving a raw surface. Of course this, as a remedial measure, is most applicable to superficial burns; but even in such cases as involve destruction of the more deep tissues, it is not used without advantage, in so far as the personal comfort of the patient is concerned. In such cases, after the lapse of a few days, the crust formed by the soap is easily removed, so as to permit the employment of other remedies, if necessary. I am not prepared to say whether the benefit and instantaneous relief, following the application of the lather, are to be ascribed to its chemical composition, or simply to the fact of its affording some degree of protection from atmospheric agency, or both. Were it necessary, I could easily adduce many cases in illustration of its extreme value as a local application; but as this would be needlessly encroaching upon the space of your journal, I leave it to those of the profession who have not yet tested its efficacy, to substantiate, by the result of their own experience, the truth of the preceding statements.

London Medical Gazette.

On the advantage of keeping the Umbilical Cord whole for some short time after birth. By M. BAUDELLOCQUE.—In all cases where the infant is born weakly or in a state of asphyxia, M. Baudelocque recommends not to cut the umbilical cord for some time at least after birth. He relates that since he has followed the opinions of Smellie, Levret, Chaussier, &c. on this subject, he has not lost a single case, although when born the child might be in a state of pretty complete asphyxia or apoplexy. He states that, though the child be born in an apoplectic or asphyxiated state, the circulation still continues through the umbilical vein, even though the umbilical arteries should have ceased to beat, and that premature section of the umbilical cord takes away one of the chief aids to its revival.—*Ed. Med. and Surg. Journ., from Comptes Rendus de l'Académie des Sciences, 8th March, 1841.*

We extract, entire, the following paper from the Edinburgh Medical and Surgical Journal for October, notwithstanding its length, be-

cause it forms a valuable monographic review of a rare but most important class of accidents. It is impossible to add the figures appended to the original paper, nor would they be of much avail; for, the language of the writer conveys much clearer ideas than the badly executed plate.

Case of perfect Ankylosis of the five Superior Cervical Vertebrae to each other, and Complete Dislocation backwards of the 5th from the 6th, without fracture. By STEPHEN S. STANLEY, Member of the Royal College of Surgeons in London, and Assistant Surgeon of the Royal Hospital, Haslar.—History of the case sent with the patient; with the subsequent symptoms and treatment pursued by Dr. Mortimer, the senior surgeon under whose care he was placed.

George Weldon, aged 37, seaman, lost his footing yesterday evening, the 20th of July, 1838, about nine o'clock, and fell backwards on his head on the deck. I found him immediately afterwards complaining of a severe pain in the back part of his neck and between the shoulders, and of pain and numbness in the arms. His face was pale, and his pulse weak. Five grains of *Carb. Ammoniae* in an ounce of camphor mixture were administered, after which he rallied. He is worse this morning, complaining of numbness, not only in the arms, but also in the legs; of the pain in the back part of the neck being more severe, and of inability to turn or move in any direction. As the ship is in dock, it is thought advisable to send him to Haslar Hospital for the benefit of hospital treatment. Signed JAMES M. DEAS, Assistant Surgeon, H. M. S. Pique, July 21, 1838.

Admitted into the Haslar Royal Naval Hospital, on the 21st of July, 1838, at eleven A.M., in a state of perfect consciousness, without wound or external appearance of bruise. Both arms are commencing paralytic, the left the most so. The accident occurred yesterday evening, since which he has not passed urine, nor have the bowels been opened; the pulse is slow, weak and oppressed; pupils unaffected; nor does he refer to any complaint, save about the muscles of the neck and shoulders.

His breathing is undisturbed. The catheter was introduced; a draught of infusion of senna was immediately given, and an enema was administered. Evening, a free evacuation from the bowels had taken place; but the pulse was quick and sharp. The enema was repeated; and twenty ounces of blood were drawn from the arm.

22d July.—Respiration is hurried; the pulse is weak; there are continual attempts to expectorate a frothy mucus, but the attempt is ineffectual; was most anxious to inhale air; he desired to be raised higher in bed; this is

accomplished with facility, by the rude yet excellent apparatus of Borthwick.

The enema was repeated; the urine was withdrawn by a catheter; and six grains of calomel and one scruple of jalap were given in the form of bolus.

Noon.—He is easier, he breathes more uninterruptedly but the pulse flags. Evening.—Respiration laborious; death is approaching. Died at half-past four o'clock on the morning of the 23d, exactly fifty-five hours and a-half after the accident, and forty-one hours and a-half after his admission into this hospital.

Post-mortem.—On the posterior surface of the body, extending from the occiput to as far as the sixth or seventh dorsal vertebra, there was considerable ecchymosis; and in making a section of the integuments and subcutaneous cellular tissue, a quantity of blood was found effused into its texture. In prosecuting the dissection further, especially in a space reaching from the first cervical to the second dorsal vertebra, coagulated blood in great quantity was found surrounding the muscular fibres, a number of which were ruptured and softened. These being sponged away, a little more careful dissection exposed to view a considerable displacement backwards, of the fifth from the sixth cervical vertebra. All the blood was sponged and cleared away, and as much of the soft parts removed as was possible, for the purpose of ascertaining the exact position of the dislocated vertebra. It was then found that the little finger could easily be passed underneath it, into the spinal canal; and that the body of the fifth pressed severely on the spinal chord, and rested on the laminae and spinous process of the sixth cervical vertebra. The spinal column was now removed (sawing through the angles of the ribs) at the seventh dorsal vertebra. It was then ascertained beyond all doubt, that the injury was a complete dislocation without fracture. The ligaments and intervertebral substance were all ruptured; and when suspended from above, the parts were held together by the vertebral arteries and spinal marrow, with its theca alone, the *theca vertebralis* being uninjured.

Head.—The cranium was thick and very heavy; the thinnest part measuring two lines and a-half, and the thickest five lines and a-half. The great longitudinal sinus was gorged with blood, and so large as to admit with ease the forefinger. The medullary substance of the brain was soft and very vascular. When the section of the *centrum magnum ovale* was made, it was found studded with spots of red blood. No other abnormal appearance was observed until an attempt was made to remove it, when it was found impossible to pass a knife through the *foramen magnum*, to make a section of the *medulla oblongata*. The brain was, however, removed, and it was then ascertained that the *foramen magnum* was so much con-

tracted, as scarcely to admit the point of the little finger.

On closer inspection, and after dissecting off the *dura mater* in this situation, the constriction was evidently produced by the odontoid process of the abscess being much larger than natural, and projecting in a conspicuous manner upwards towards the base of the brain, and backwards on the *medulla oblongata*, which, from the little that was attached to the *pons Varolii*, appeared small and nearly flat. By applying the saw at the posterior margin of the *foramen magnum*, and carrying it obliquely forwards and upwards, a section of the base of the cranium was now made for the purpose of ascertaining the exact condition of the odontoid process, and the beautifully arranged ligaments in this situation. The section being completed, and a little dissection made, it was ascertained that the whole of the cervical vertebræ, from the atlas down to the seat of dislocation, were completely ankylosed. Not the least vestige of ligamentous structure could be observed, with the exception of the capsular and occipito-atlantal ligaments, forming the articulation between the occiput and atlas; and of these, the capsular ligaments and synovial membranes, when cut into, were found to be so much thickened and altered in structure, as more to resemble cartilage than ligament, and calculated to impede seriously, if not altogether, the nodding actions of the head and slight lateral motion, which this articulation permits. No trace could be found whatever of the *apparatus ligamentosus*, and lateral ligaments, connecting the occiput with the atlas; neither was there any thing remaining in the form of the ligaments which complete the articulation between the atlas and axis; but nature, ever bountiful, had formed a beautiful provision for the absence of the transverse ligament by an isthmus of bone, extending from the anterior aspect of the odontoid process to the posterior concave surface of the anterior arch of the atlas; thus, in most respects, answering every purpose for which the transverse ligament is known, although placed in a situation diametrically opposite.

After the usual process of maceration the bones appeared white, and exceedingly compact in their tissue, and, with the exception of their ankylosed condition, are perfectly normal:—their form in every respect not appearing to differ from the general characters by which these vertebræ are known.

The most remarkable feature in the whole preparation, and evidently the result of a former dislocation forwards, is the position of the atlas; which, on the right side especially, is pushed forwards and upwards from off the articulating surface of the axis, so as to cause the odontoid process to present itself nearly in the centre of the circle of the atlas. A bridge of bone exactly half an inch in length, and varying from three to four lines in breadth, passes nearly horizontally forwards, from the

odontoid process to the atlas, as described above, and connects them together. The axis is also pushed forwards in the same manner from the third cervical vertebra but not to so great an extent, giving the entire preparation a twisted appearance to the left side. Its length, measuring anteriorly, from the superior margin of the ring of the atlas to the inferior margin of the body of the fifth cervical vertebra, is three inches and a half. The diameter of the spinal foramen of the atlas, from behind forwards, is exactly one inch and four lines, and the transverse diameter one inch and half a line. The odontoid process, instead of terminating at its apex in a point, as it generally does, presents a broad and irregular ovoid form, measuring transversely half an inch, and from behind forwards, including the bony bridge alluded to, one inch: its length is three-fourths of an inch, and its distance from the posterior arch of the ring of the atlas only four lines.

Remarks.—It may be supposed that, having ascertained the exact nature of this accident, the author of this paper was very anxious to obtain every particular relating to this man's history; and as the Pique was still riding at Spithead, he took the earliest opportunity of going on board, for the express purpose of gaining all the information possible, and he has to thank Mr. Deas, the Assistant Surgeon, for his kindness in furthering his views on that occasion.

It appears that the man had, for some years past, always been subject to a stiff-neck, that he very often complained of rheumatic pains in that region, and of sore throat. He was, nevertheless, a very efficient and active seaman, always doing his duty, and never on the sick list; but was unable to move his head to one side, and was compelled to turn his whole body round when he was desirous of looking either to the right or to the left. It further appears that, at the time the accident occurred, the deceased, although not drunk, was in the state that sailors call "rather fresh," and was "larking" with some of his messmates, and in attempting to catch one of them, his foot slipped, and he fell backwards, his head only slightly striking the deck.

Complete dislocation of the vertebræ, without fracture, (if the first and second cervical be excepted,) is so very rare, that the occurrence of such an accident is doubted, and even positively denied, by some of our best surgeons. It is very desirable, therefore, that well authenticated cases should be published. Sir Astley Cooper, in his work on dislocations, appears to doubt the possibility of a complete dislocation, without fracture, though he does not deny that such an accident may occur. Delpech, Boyer, and some others, assert that it is utterly impossible; and the latter gentleman gives some very sound anatomical facts,

in regard to the construction of the articulations, for his reason in disbelieving it.

There are, however, several undoubted cases on record; and Mr. Lawrence, Surgeon of Bartholomew's Hospital, has published a case, if the author's memory is correct, in the *Medico-Chirurgical Transactions* that ought to convince the most sceptical. Sir Charles Bell has also published, in his work on *Injuries of the Spine and Thigh Bone*, a case of complete dislocation of the last dorsal from the first lumbar vertebra, (in a child that was knocked down by a stage-coach,) with entire division of the spinal cord. This patient survived, and was taken from the hospital, and died thirteen months afterwards from croup: there was, however, a small portion of the bone broken off.

Professor Rust has also recorded a case of dislocation in the cervical region, which was replaced by himself. The injury occurred in consequence of a severe fall on the head. The neck was completely bent to one side, the upper extremities paralysed, and attacks of convulsions and hiccough supervened. Replacement was attempted, and succeeded. The patient was made to sit on the ground, and the head drawn straight upwards by an able assistant,—and the cure was completed by the local application of cold.

Ehrlich has recorded a most remarkable case of dislocation of the atlas. A young man, 16 years of age, fell in carrying a sack of flour upstairs, and his head was forcibly bent forwards by the burden. He was found senseless; with livid countenance, prominent eyes, tongue hanging out of the mouth, with slow and interrupted respiration, and pulse scarcely perceptible. The limbs were motionless, and apparently paralysed; urine and feces passing involuntarily; the head was inclined to the right side, and had lost its firmness, so that it fell by its own weight from side to side, when unsupported. The articular process of the second vertebra projected on the left side. Ehrlich considered it a dislocation with pressure on the spinal cord, and caused extension of the head to be made, while he endeavoured to force back the atlas, and bring the second vertebra forwards.

After some effort, the replacement was effected with a snap: the head now became steady, and the arms moved; but the patient remained insensible, with dilated pupils. The respiration and pulse were improved; and, on the next day, consciousness returned. A good deal of swelling of the neck and ecchymosis came on, but soon subsided; and after ten or twelve days he quite recovered.

In all the accounts, however, which the author has read, he notices that the direction of the displacement, when resulting from accident, has been forwards and upwards, and not, as in this case, backwards and downwards.

That the ankylosis of the cervical vertebræ,

above the seat of the injury, may not have had some influence in producing this anomaly, is left to the more matured judgment of the elder members of the profession; though the writer is certainly disposed to think that the direction of the dislocation, and the accident also, may be accounted for, in a great measure, by their abnormal condition. It appears very doubtful that the slight fall which this man got, could, under ordinary circumstances, have produced such extensive and fatal injury.

With regard to the ankylosis in this instance, there are a number of cases on record very similar, though not to so great an extent. Wypersse and Boyer have both met with cases of dislocation of the occiput upon the atlas, and of the latter upon the second vertebræ, with ankylosis. Daubenton mentions a very remarkable case of this kind, where the second vertebra of the neck was pushed so far back as to leave only an interval of three lines between the odontoid process and the posterior arch of the atlas; the second vertebra, at the same time, inclining towards the right. It certainly appears surprising that serious and fatal symptoms should not supervene, when we consider that the spinal marrow must inevitably be compressed in a very great degree; and it is a matter of astonishment, how a patient could possibly live sufficiently long for ankylosis to be completed.

In this case, related by Daubenton, the distance between the odontoid process and the posterior arch of the atlas, is one line less than in the case related above.

Professor Sandifort, of Leyden, has described a case where there was displacement of the atlas and axis, with ankylosis of these two bones to each other, and to the occiput: he describes also several others, chiefly of ankylosis, between the occiput and atlas.

There is one remarkable case recorded by him, where the occiput, all the cervical, and the two superior dorsal vertebræ, were ankylosed; but the articulating processes and laminae only were implicated, the bodies of the vertebræ being still connected by their fibro-cartilage.

We have also in the museum, at Haslar, a specimen of entire ankylosis of the second and third cervical vertebræ to each other; but there does not appear to have been any displacement.

There is another preparation, showing the commencement of ankylosis in the dorsal region, at the articulating processes.

It would appear, therefore, that a more extensive case of complete ankylosis than the one now under consideration, has not yet been authenticated and published. There can be no doubt that the primary disease has been ulceration of the cartilages, spontaneous dislocation of the first and second vertebræ following. Professor Rust, of Vienna, has given the best, if not the only account, of this disease,—first,

in the Salzburg Medico-Chirurgical Journal, in 1813, and afterwards, more elaborately, in his work on Diseases of the Joints, published in 1817.

The first symptoms of this disease, according to him, are, pain in the neck, becoming more severe at night, or in swallowing a large mouthful, or drawing a deep breath. The pain affects one side of the neck, especially when the head is moved towards the shoulder; it extends from the larynx towards the nape, and often to the scapula of the pained side.

No external alteration is perceptible; but firm pressure on the region of the first and second vertebræ produces considerable pain, and thus points out the seat of the disease. The difficulty of swallowing, and breathing, and hoarseness, increase, alternating with pain in the neck, which seems to fix about the back of the head, and becomes intolerable on moving that part. The head sinks towards one shoulder, the face being turned a little down; for, in general, the articulations are affected on one side only, and that was the left, in seven out of nine examinations, after death. If both sides are affected, the head will incline directly forwards. In this state, things continue for several weeks or months; and, before worse symptoms come on, there is often apparent improvement, freer motion, and more natural situation of the head. But the uneasiness in speaking and swallowing returns; the pain becomes more severe and extensive; the head falls a little backwards, and sinks towards the opposite side. The patient feels as if the head were too heavy, and he carefully supports it with his hands, when he moves from the sitting to the lying position, or *vice versa*. This may be considered a pathognomonic symptom of the affection. Another symptom which, at this period, shows the true nature of the disease, is a peculiar expression of pain in the countenance; which, combined with the position and stiffness of the head, constitutes so characteristic an assemblage of appearances, that it is enough to have seen it once in order to recognize it again immediately. In the further progress of the case, noise in the head, deafness, giddiness, cramps and convulsions, partial paralysis, particularly of the upper limbs, loss of voice, purulent expectoration, and hectic symptoms, supervene. Generally, no external change is observable, either in the neck or in the cervical region; and Rust observed, in one case only, swelling of the affected side, which broke, and left fistulous ulcers.

But the slightest pressure in the region of the three upper vertebræ is acutely painful; and, sometimes, in the advanced period of the disease, a grating of rough surfaces is distinctly perceived, when the head is turned. The patient may continue for months in this helpless and painful state, and then dies, either from exhaustion or debility; or, which is more frequent, suddenly and unexpectedly. Expe-

rience has furnished very little satisfactory knowledge in regard to the treatment of this disease.

Blisters, setons, and issues have been tried; but Rust found these remedies only capable of retarding the progress of the disease, and producing little or no abatement in the symptoms.

The only cure is that effected by nature; and the best treatment appears to be that, where such a position, and quietude of the patient is adopted, which favours its terminating in ankylosis.

It appears rather strange that the ankylosis should have terminated so abruptly in this case. There was no appearance whatever of a disposition to change in the articulation between the fifth and sixth vertebra, the seat of dislocation; the ligaments in this situation (although ruptured) were distinctly capable of being made out, and those immediately succeeding are perfectly normal, with the exception of the *ligamenta subflava*, in the dorsal region, where there are evident symptoms of ossific change.

INTERMENTS in the City and Liberties of Philadelphia, from the 20th to the 27th of November.

Diseases.	Adults.	Children.	Diseases.	Adults.	Children.
Asphyxia,	0	1	Brought forward,	26	30
Apoplexy	1	0	Mania a Potu,	3	0
Burns,	0	1	Neglect,	1	0
Croup,	0	3	Old age,	2	0
Consumption of the lungs,	11	2	Pleurisy,	1	0
Concussion of brain,	1	0	Small pox,	3	6
Convulsions,	0	5	Still-born,	0	5
Cramp of Stomach,	1	0	Suicide,	1	0
Diarrhœa,	1	0	Teething,	1	0
Dropsy,	1	0	Unknown,	1	0
— Head,	0	2	Total,	80—38	42
Dysentery,	1	0			
Debility	1	0	Of the above, there		
Epilepsy,	0	1	were under 1 year,	20	
Fever, intermittent	0	1	From 1 to 2	4	
— Nervous,	1	0	2 to 5	12	
— Typhus,	1	0	5 to 10	2	
— Typhoid,	1	1	10 to 15	0	
— Scarlet,	0	5	15 to 20	4	
Inflammation,	1	0	20 to 30	12	
— Brain,	1	1	30 to 40	11	
— Bronchi,	1	1	40 to 50	4	
— Lungs,	1	3	50 to 60	3	
— Stomach,	0	1	60 to 70	1	
— Heart,	1	0	70 to 80	4	
— Larynx	0	1	80 to 90	3	
Marasmus,	0	1	Total,		80
— —	—	—	Carried forward,	26	30